# Standard Units & Basic Dimensions

The **International System of Units** (S.I.) was developed so that measurements could be consistent around the world.

These units include the _____, the _____ and the _____.

These are referred to as _____ which means they can be used to derive all other units of measurement.

Other units, such as _____ and _____, are called _____ because they are combinations of the base units.

All quantities can be measured in units derived from the base S.I. units.

_____ is the study of motion. It uses _____, _____, _____, _____ and time.

These are derived from the fundamental quantities of mass, length and time.

**Example 1: Complete the table**

| Vector | Scalar | Fundamental Quantities | SI Units |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

_____ and _____ are the studies of forces in equilibrium and the forces causing motion respectively.

These involve the derived quantities of _____ and _____.

Force = _____ x _____

In terms of base units, this is kg x $ms^{-2}$ = $kgms^{-2}$

Or… _____!

_____ is the force of _____ on an object.

An object with mass $m$ kg has weight $mg$ N, where $g$ is the acceleration due to gravity: _____

On Earth, this is _____ $ms^{-2}$ to 3sf.

On the Moon, your mass would be the same but your weight would be different!

Weight is a _____ quantity whereas mass is _____.

When doing calculations in mechanics, you must check that all the _____ are used throughout the question.

This may involve converting units before doing a calculation in order for a formula to work.

When doing calculations involving $g$, this will usually be given as _____, _____ or _____.

Your answers should be given to the _____ as $g$.